FIG. 1

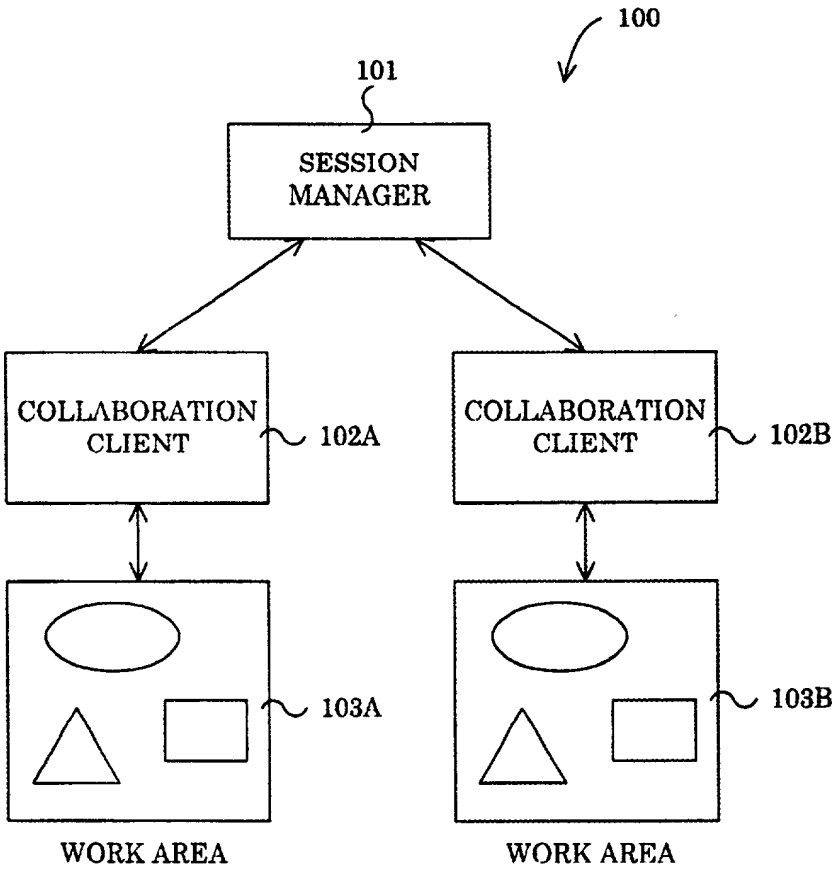

100
101
SESSION MANAGER
COLLABORATION CLIENT
102A
COLLABORATION CLIENT
102B
103A
103B
WORK AREA
WORK AREA

FIG. 2

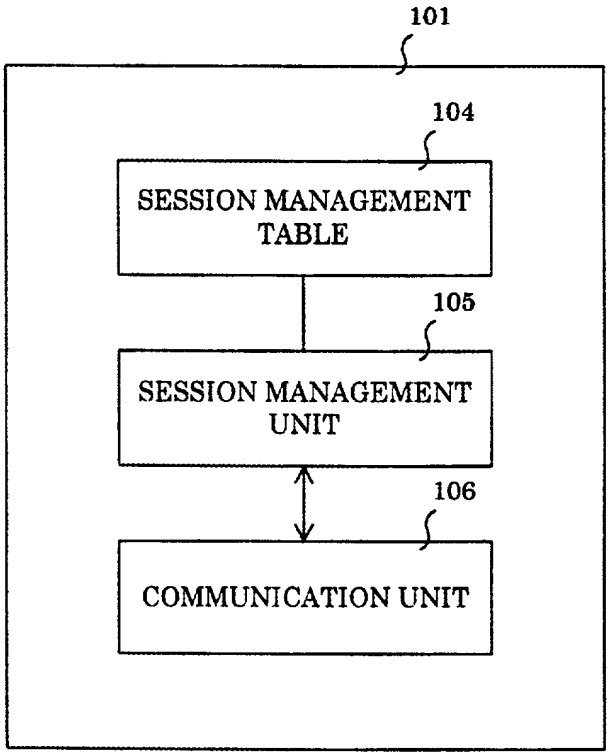

101
104
SESSION MANAGEMENT TABLE
105
SESSION MANAGEMENT UNIT
106
COMMUNICATION UNIT

FIG. 3

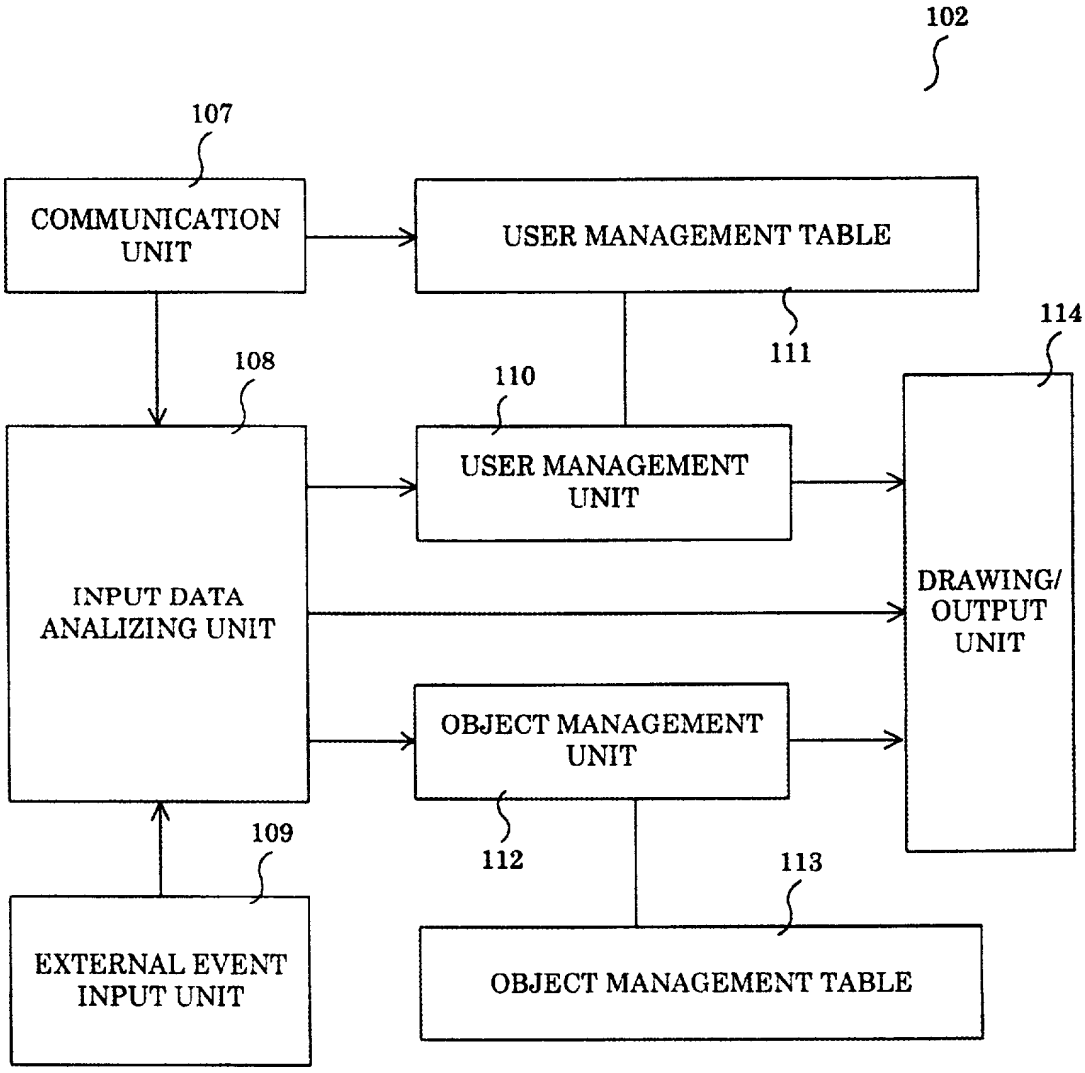

102
107
COMMUNICATION UNIT
USER MANAGEMENT TABLE
111
114
108
110
USER MANAGEMENT UNIT
INPUT DATA ANALIZING UNIT
DRAWING/ OUTPUT UNIT
OBJECT MANAGEMENT UNIT
109
112
113
EXTERNAL EVENT INPUT UNIT
OBJECT MANAGEMENT TABLE

FIG. 4

104

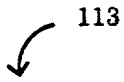
SESSION	1	2	3	...
SESSION ID	SID_1	SID_2	SID_3	...
UAID LIST	UID_{1a} UID_{1b} ...	UID_{2a} UID_{2b} ...	UID_{3a} UID_{3b} ...	...
Node ID LIST	NID_{1a} NID_{1b} ...	NID_{2a} NID_{2b} ...	NID_{3a} NID_{3b} ...	...

FIG. 5

111

USER	1	2	3	...
Node ID	NID_1	NID_2	NID_3	...
USER NAME	U_1	U_2	U_3	...
OWNER IDENTIFIER	O_1	O_2	O_3	...
SECURITY LEVEL	S_1	S_2	S_3	...

FIG. 6



OBJECT		1	2	3	...
OBJECT TYPE (LINE, SQUARE, ETC.)		K_1	K_2	K_3	...
STARTING POINT	X	${}_bX_1$	${}_bX_2$	${}_bX_3$	...
	Y	${}_bY_1$	${}_bY_2$	${}_bY_3$	...
FINISHING POINT	X	${}_eX_1$	${}_eX_2$	${}_eX_3$	...
	Y	${}_eY_1$	${}_eY_2$	${}_eY_3$	...
Node ID		NID_1	NID_2	NID_3	...
GRAYING-OUT FLAG		0 | 1	0 | 1	0 | 1	...

FIG. 7

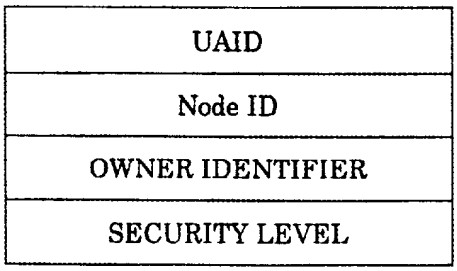

UAID
Node ID
OWNER IDENTIFIER
SECURITY LEVEL

FIG. 8

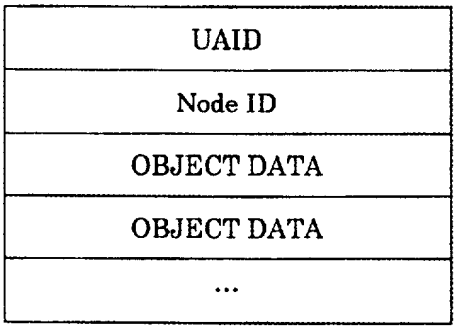

UAID
Node ID
OBJECT DATA
OBJECT DATA
...

FIG. 9

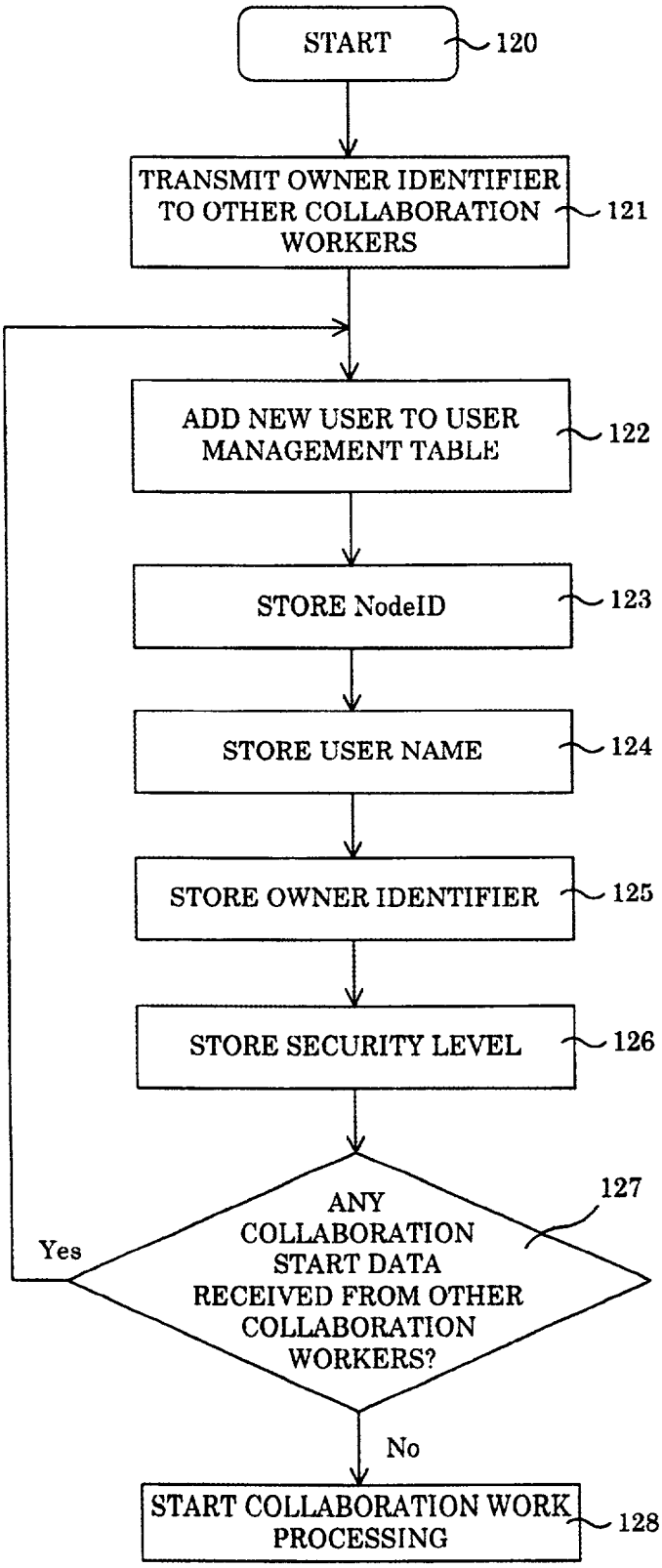

START
120
TRANSMIT OWNER IDENTIFIER TO OTHER COLLABORATION WORKERS
121
ADD NEW USER TO USER MANAGEMENT TABLE
122
STORE NodeID
123
STORE USER NAME
124
STORE OWNER IDENTIFIER
125
STORE SECURITY LEVEL
126
ANY COLLABORATION START DATA RECEIVED FROM OTHER COLLABORATION WORKERS?
127
Yes
No
START COLLABORATION WORK PROCESSING
128

FIG. 10

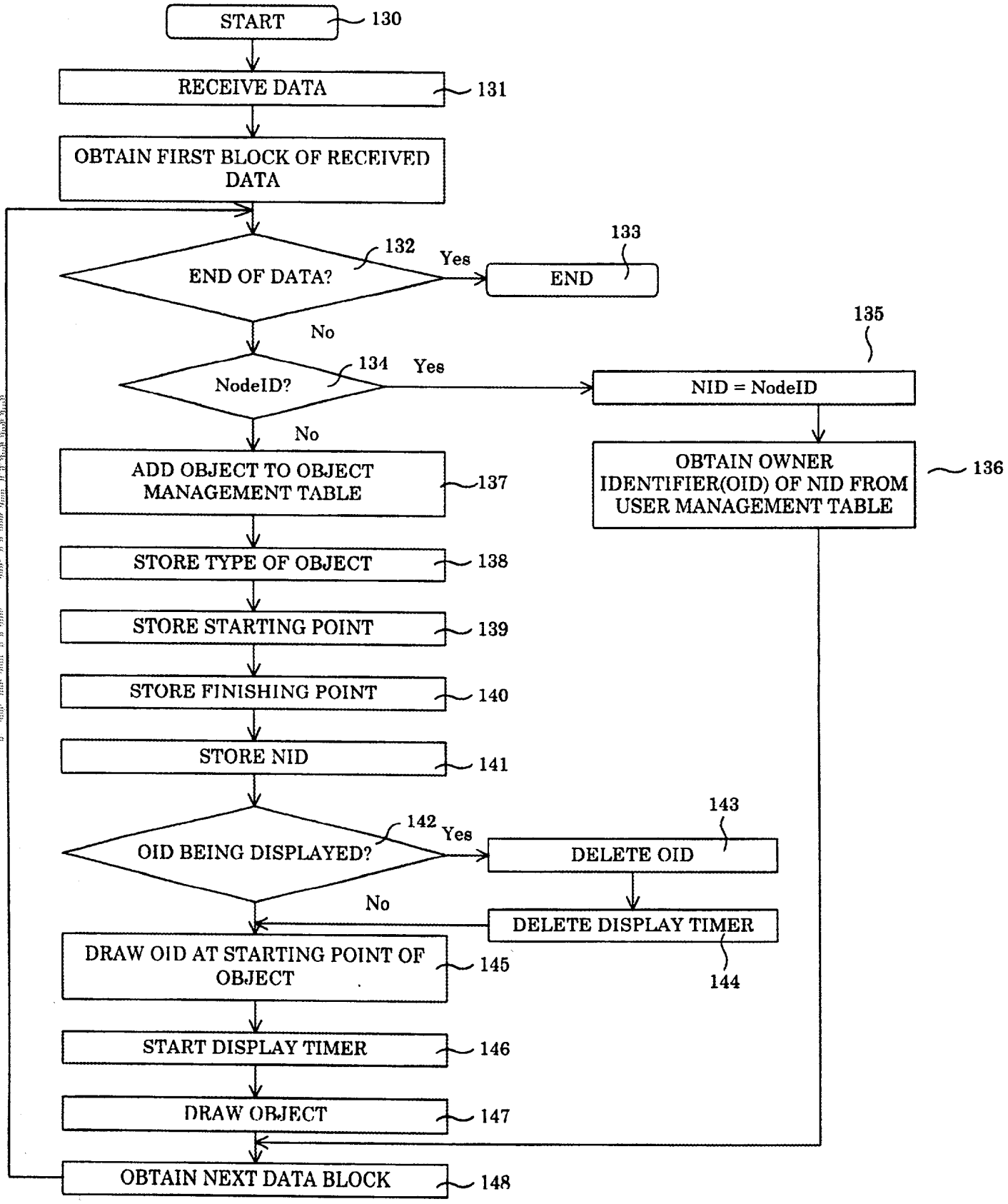

START
130
RECEIVE DATA
131
OBTAIN FIRST BLOCK OF RECEIVED DATA
END OF DATA?
132
Yes
133
END
No
NodeID?
134
Yes
135
NID = NodeID
No
ADD OBJECT TO OBJECT MANAGEMENT TABLE
137
OBTAIN OWNER IDENTIFIER(OID) OF NID FROM USER MANAGEMENT TABLE
136
STORE TYPE OF OBJECT
138
STORE STARTING POINT
139
STORE FINISHING POINT
140
STORE NID
141
OID BEING DISPLAYED?
142
Yes
143
DELETE OID
No
DELETE DISPLAY TIMER
144
DRAW OID AT STARTING POINT OF OBJECT
145
START DISPLAY TIMER
146
DRAW OBJECT
147
OBTAIN NEXT DATA BLOCK
148

FIG. 11

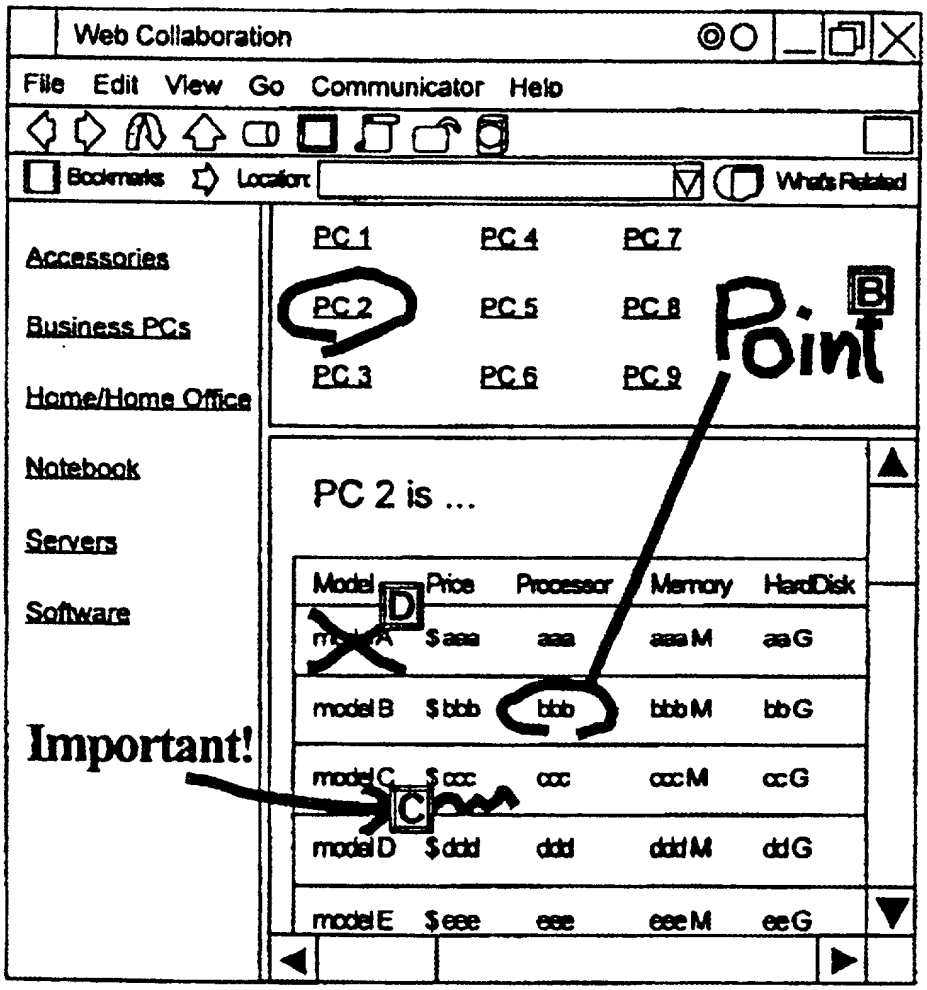

Web Collaboration
File Edit View Go Communicator Help
Bookmarks Location: What's Related
Accessories
Business PCs
Home/Home Office
Notebook
Servers
Software
PC 1
PC 4
PC 7
PC 2
PC 5
PC 8
PC 3
PC 6
PC 9
Point
B
PC 2 is ...
Model
Price
Processor
Memory
HardDisk
D
model A $aaa aaa aaa M aaG
model B $bbb bbb bbb M bbG
model C $ccc ccc ccc M ccG
model D $ddd ddd ddd M ddG
model E $eee eee eee M eeG
Important!
C

FIG. 12

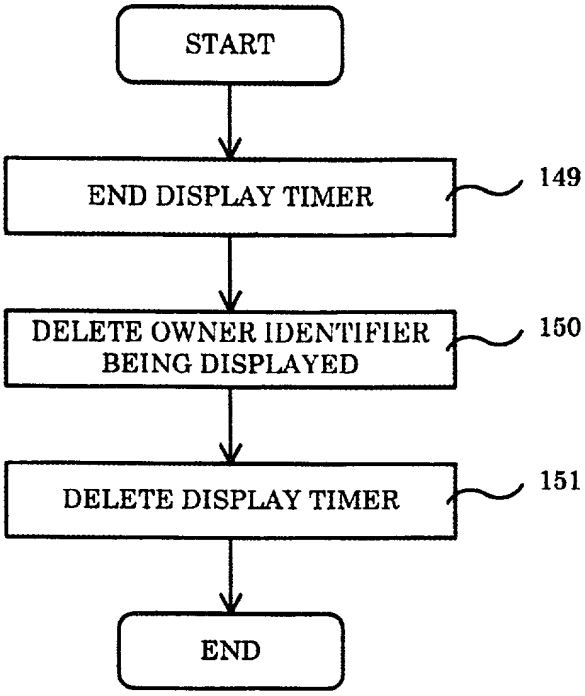

START
END DISPLAY TIMER
149
DELETE OWNER IDENTIFIER BEING DISPLAYED
150
DELETE DISPLAY TIMER
151
END

FIG. 13

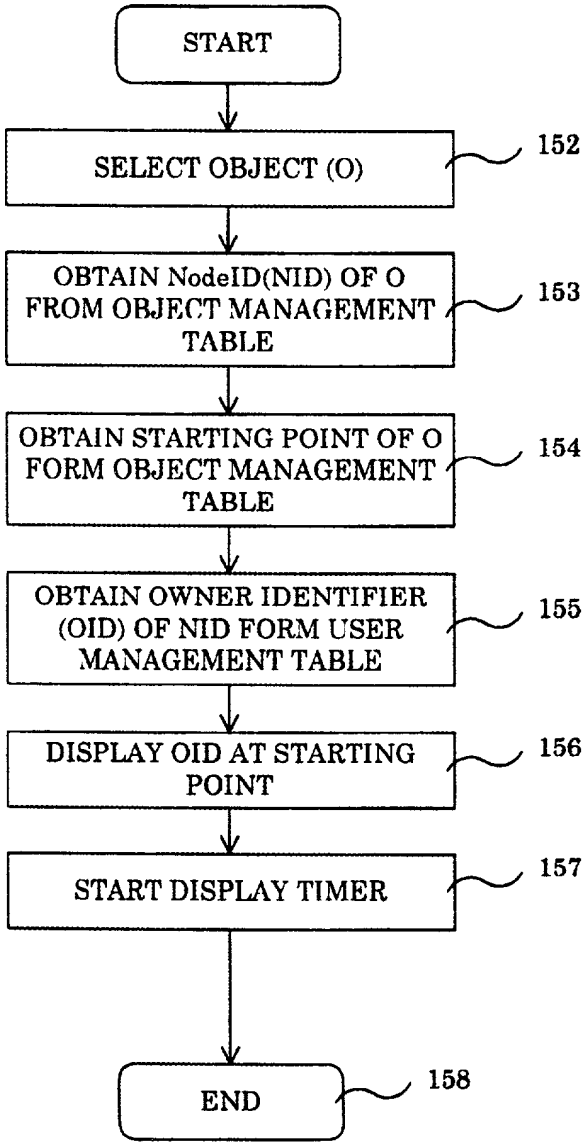

START
SELECT OBJECT (O)
152
OBTAIN NodeID(NID) OF O FROM OBJECT MANAGEMENT TABLE
153
OBTAIN STARTING POINT OF O FORM OBJECT MANAGEMENT TABLE
154
OBTAIN OWNER IDENTIFIER (OID) OF NID FORM USER MANAGEMENT TABLE
155
DISPLAY OID AT STARTING POINT
156
START DISPLAY TIMER
157
END
158

FIG. 14

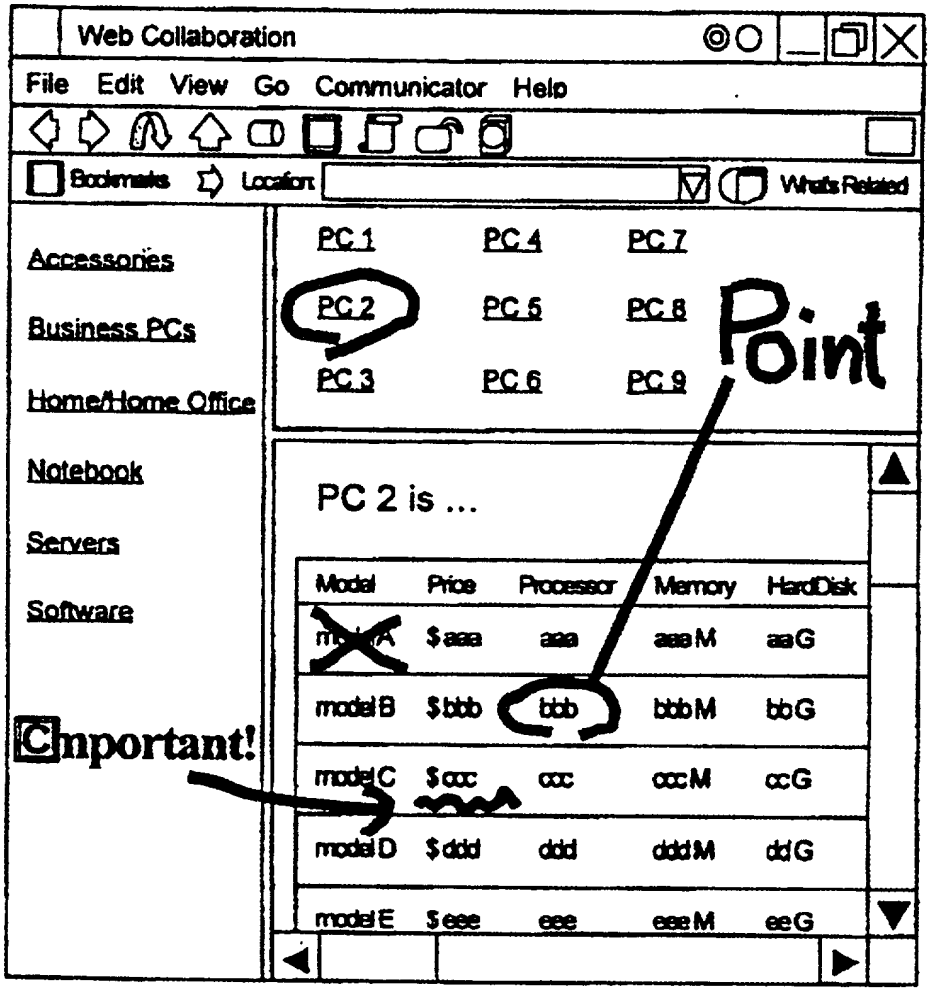

Web Collaboration
File Edit View Go Communicator Help
Bookmarks Location: What's Related
Accessories
Business PCs
Home/Home Office
Notebook
Servers
Software
PC 1
PC 4
PC 7
PC 2
PC 5
PC 8
PC 3
PC 6
PC 9
Point
PC 2 is ...
Model
Price
Processor
Memory
HardDisk
model B
$bbb
bbb
bbbM
bbG
model C
$ccc
ccc
cccM
ccG
model D
$ddd
ddd
dddM
ddG
model E
$eee
eee
eeeM
eeG
Important!

FIG. 15

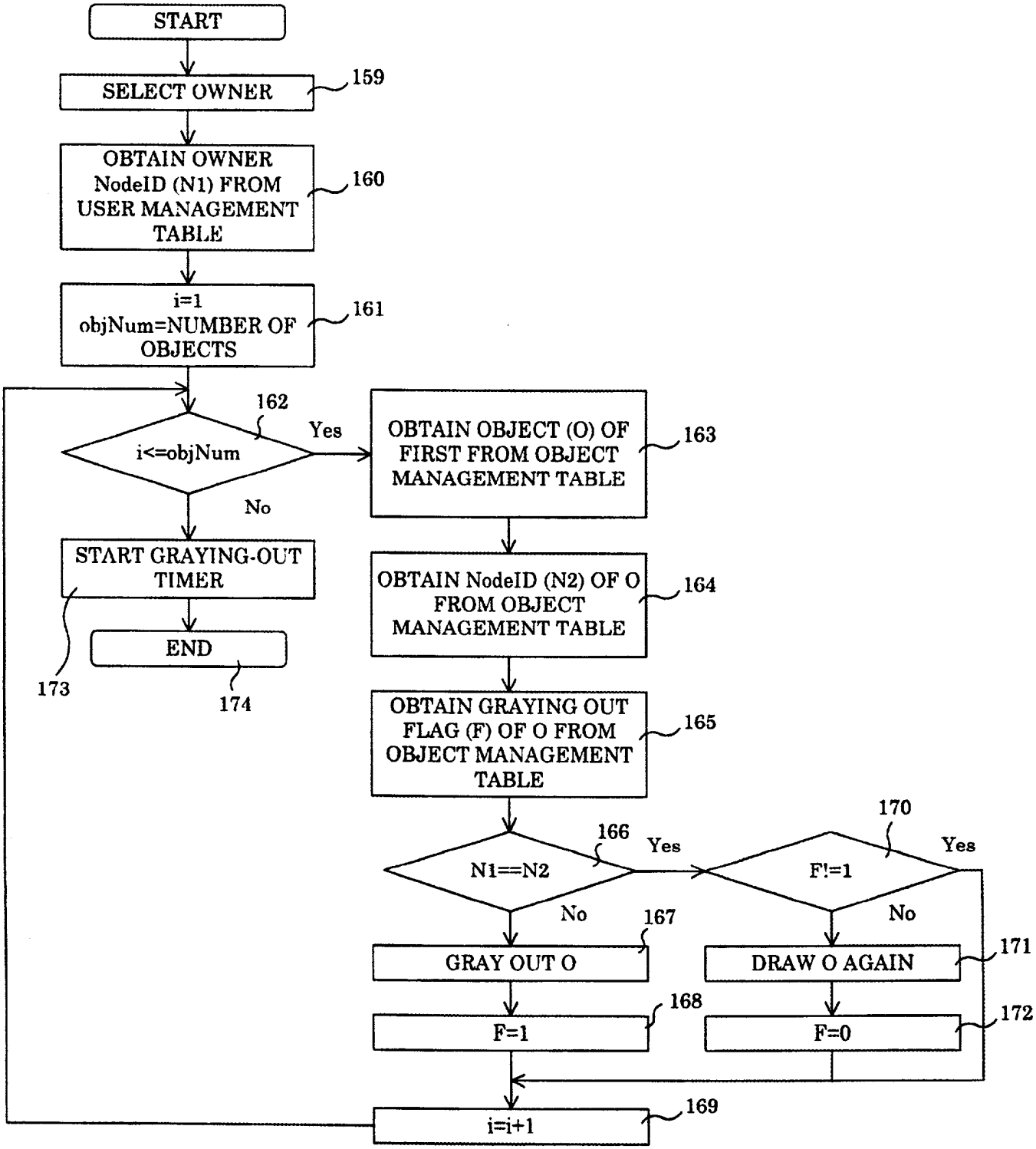

START
SELECT OWNER
159
OBTAIN OWNER NodeID (N1) FROM USER MANAGEMENT TABLE
160
i=1
objNum=NUMBER OF OBJECTS
161
162
i<=objNum
Yes
No
OBTAIN OBJECT (O) OF FIRST FROM OBJECT MANAGEMENT TABLE
163
START GRAYING-OUT TIMER
END
173
174
OBTAIN NodeID (N2) OF O FROM OBJECT MANAGEMENT TABLE
164
OBTAIN GRAYING OUT FLAG (F) OF O FROM OBJECT MANAGEMENT TABLE
165
166
N1==N2
Yes
No
170
F!=1
Yes
No
GRAY OUT O
167
DRAW O AGAIN
171
F=1
168
F=0
172
i=i+1
169

FIG. 16

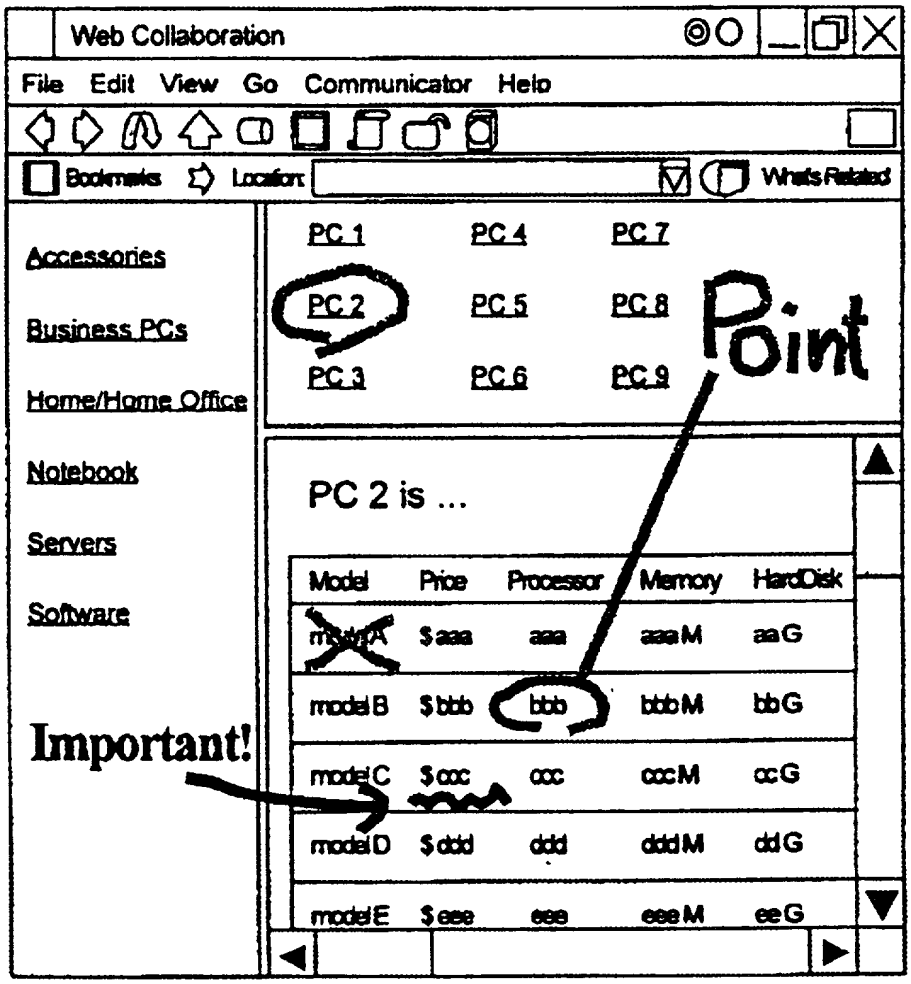
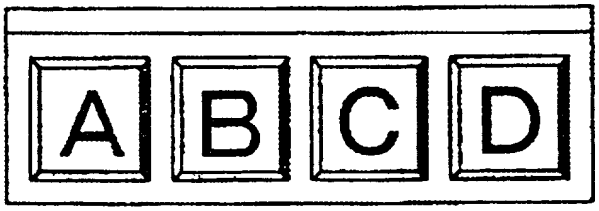
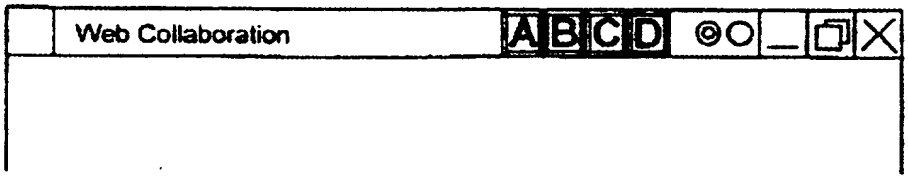

Web Collaboration
File Edit View Go Communicator Help
Bookmarks Location: What's Related
Accessories
Business PCs
Home/Home Office
Notebook
Servers
Software
PC 1
PC 4
PC 7
PC 2
PC 5
PC 8
PC 3
PC 6
PC 9
Point
PC 2 is ...
Model Price Processor Memory HardDisk
modelA $aaa aaa aaaM aaG
modelB $bbb bbb bbbM bbG
modelC $ccc ccc cccM ccG
modelD $ddd ddd dddM ddG
modelE $eee eee eeeM eeG
Important!

FIG. 17

(a)



(b)



(c)

FIG. 18

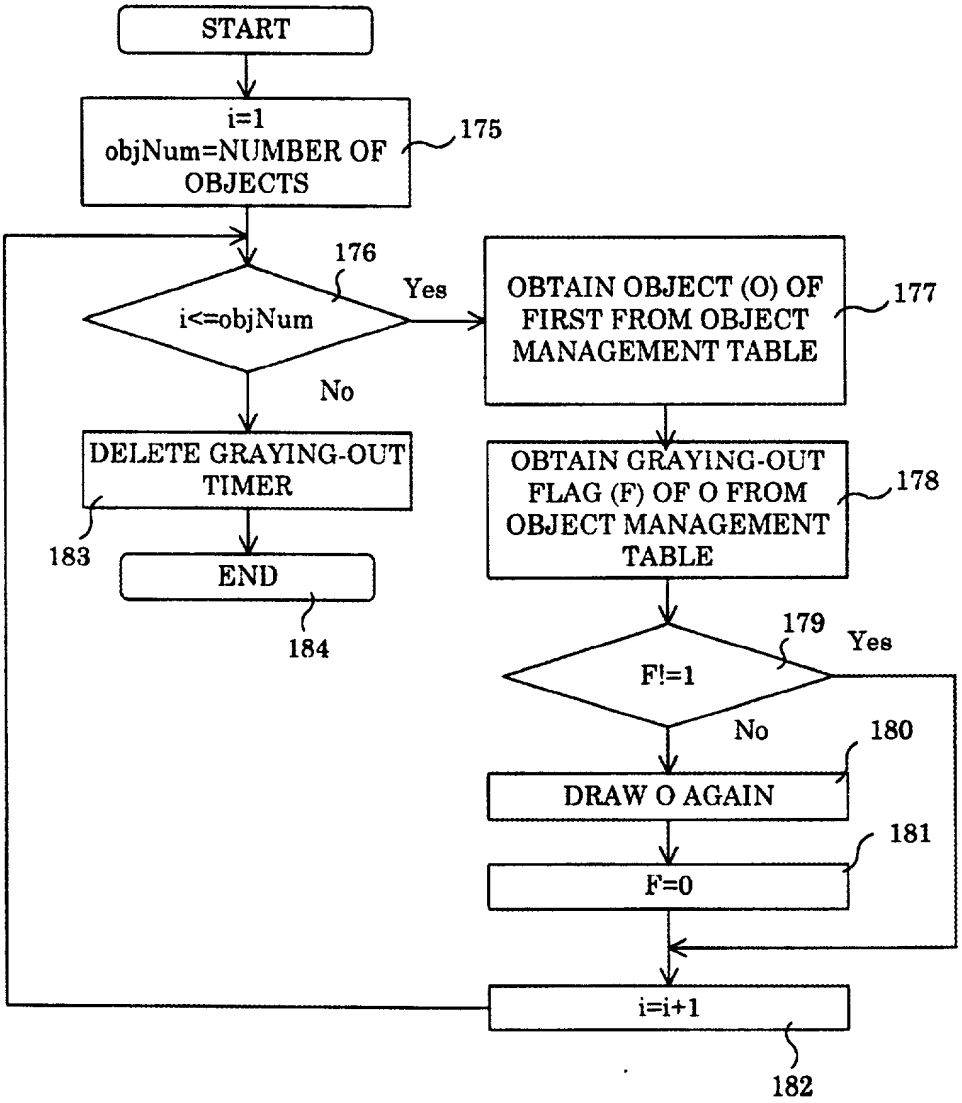

START
i=1
objNum=NUMBER OF OBJECTS
175
176
i<=objNum
Yes
No
OBTAIN OBJECT (O) OF FIRST FROM OBJECT MANAGEMENT TABLE
177
DELETE GRAYING-OUT TIMER
183
END
184
OBTAIN GRAYING-OUT FLAG (F) OF O FROM OBJECT MANAGEMENT TABLE
178
179
F!=1
Yes
No
180
DRAW O AGAIN
181
F=0
i=i+1
182

FIG. 19

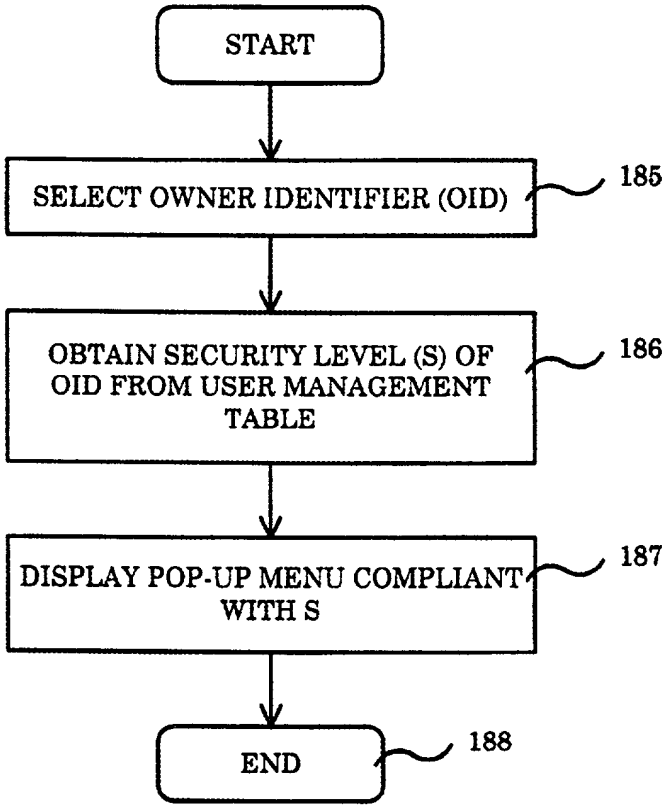

START
SELECT OWNER IDENTIFIER (OID)
185
OBTAIN SECURITY LEVEL (S) OF OID FROM USER MANAGEMENT TABLE
186
DISPLAY POP-UP MENU COMPLIANT WITH S
187
END
188

FIG. 20

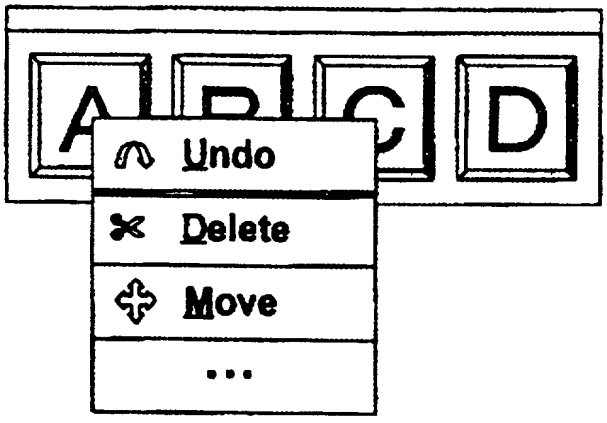

Undo
Delete
Move
...

FIG. 21

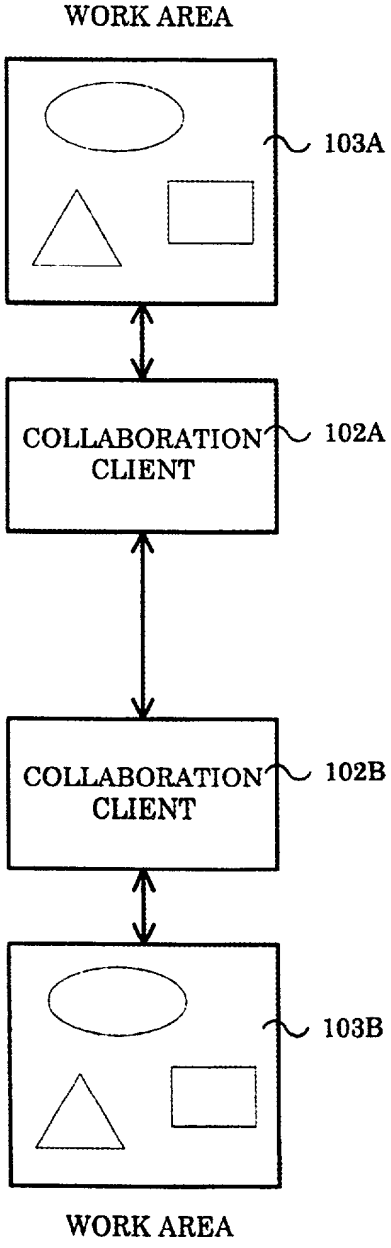

WORK AREA
103A
COLLABORATION CLIENT
102A
COLLABORATION CLIENT
102B
103B
WORK AREA

FIG. 22

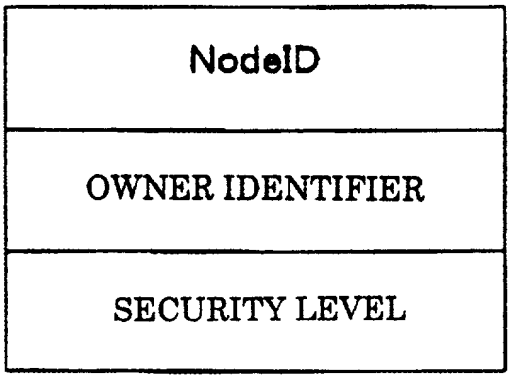
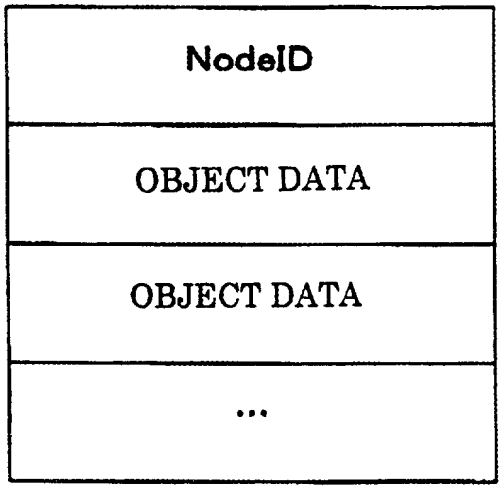

NodeID
OWNER IDENTIFIER
SECURITY LEVEL

FIG. 23


NodeID
OBJECT DATA
OBJECT DATA
...